

Abstract of the Disclosure

A gas injection apparatus for injecting a reactive gas into a reaction chamber of a semiconductor processing system includes an injector in contact with an inner surface of a wall of the reaction chamber. The injector has a plurality of nozzles through which the reactive gas is injected into the reaction chamber. A gas inlet penetrates the wall of the reaction chamber. A manifold is disposed between the wall of the reaction chamber and the injector, and supplies the reactive gas flowing through the gas inlet to the nozzles. Gas channels in the manifold are arranged on a plurality of levels to equalize the lengths of gas paths connecting the gas inlet to each of the plurality of nozzles. This configuration makes the flow rate of reactive gas supplied through each of the plurality of nozzles to the reaction chamber uniform.